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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,795	11/07/2005	John Charles Sinclair	3642.1001-000	9371
21005 7590 10/22/2010 HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133				
EXAMINER				
LEE, JAE W				
ART UNIT		PAPER NUMBER		
1656				
MAIL DATE		DELIVERY MODE		
10/22/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,795

Applicant(s)

SINCLAIR ET AL.

Examiner

JAE W. LEE

Art Unit

1656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1.5, 7-27, 29-33 and 35-42 is/are pending in the application.
- 4a) Of the above claim(s) 25-27, 29-33, 36-39, 41 and 42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1.5, 7-24, 35 and 40 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Application status

The instant Office action is a supplemental restriction requirement. According to MPEP 803.01, a restriction requirement is at the discretion of the examiner and according to 37 CFR 1.142(a), a requirement for restriction "may be made at any time before final action." See also MPEP 811.02, which states, "[s]ince 37 CFR 1.142(a) provides that restriction is proper at any stage of prosecution up to final action, a second requirement may be made when it becomes proper, even though there was a prior requirement with which applicant complied. *Ex parte Benke*, 1904 C.D. 63, 108 O.G. 1588 (Comm'r Pat. 1904)."

Upon further consideration, and additional review of the disclosure led the Examiner to issue the instant restriction requirement, which further requires an election of species of the subject matter of previous Invention I. The Examiner regrets any inconvenience this may cause.

It is noted by the Examiner that the amendment to claims filed on 02/22/2010 contains an amendment to claim 25 which is now drawn to a "method" of using the elected product, which was originally grouped as Invention II in the previous restriction requirement mailed on 07/30/2007. As such, newly submitted claim 25 is directed to an invention that is independent or distinct from the invention originally claimed. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the

merits. Accordingly, claim 25 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Election in response to the restriction requirement mailed on 05/13/2010

Applicant's election with traverse of *E. coli* PurE as a first oligomer assembly, *E. coli* Dps as a second oligomer assembly, and human ferritin heavy chain as a third oligomer assembly in the response filed on 08/13/2010, is acknowledged.

Applicants' traversal is on the basis that in the present invention, each of the protein protomers requires at least two monomers fused together. Each of the two monomers is a monomer from an oligomer assembly. The "fusion", as referred to in Claim 1 and used throughout the Specification, is a covalent linkage created by an in-frame genetic fusion via recombinant technology or chemical fusion. Such a fusion between monomers creates functional protein protomer capable of self-assembly into a protein lattice. In contrast, the structure of Grant is a protein lattice with non-covalent interactions between the groups on the surfaces of protein assemblies. Applicants further argue that the structure of Grant is two-dimensional whereas the present inventions are three-dimensional structures.

Applicants' arguments have been fully considered but are not deemed persuasive for the following reasons. First, it is noted by the Examiner that the specification does NOT define the term "fused" as recited in claim 1 to be limited to covalent or genetic fusions. As such, the Examiner interpreted the term "fused"

according to Merriam-Webster dictionary as "joined by" or "combined" (see attached, retrieved from the Internet: <<http://www.merriam-webster.com/dictionary/fused?show=1&t=1287510761>>, retrieved on 10/19/2010). Furthermore, contrary to Applicants' allegation that the structure disclosed by Grant et al. is 2-D structure, it is admitted by the Applicants on the record, in the last paragraph of page 3 (continued to page 4) of "Replay to restriction requirement" filed on 08/13/2010, that "the packing resembles *multiple layers* of dodecamers in two-dimensional sheets one dodecamer thick" which argues that it is a 3-D structure (italicized for added emphasis). Taken together, the teachings of Grant et al. meet the limitation of Claim 1, and thus, the shared technical feature of the groups is not a "special technical feature", unity of invention between the groups does not exist. For the reasons provided herein and in the previous office action, the restriction requirement is deemed proper.

Claims 25-27, 29-33, 36-39, 41 and 42 are withdrawn from further consideration by the Examiner, 37 CFR 1.142(b) as being drawn to a non-elected invention.

Claims 1, 5, 7-24, 35 and 40 are present and issue for the examination on the merits.

Election/Restrictions

Restriction is required under 35 U.S.C. 372.

This application contains claims directed to the following patentably distinct species: **dihedral, cyclic, tetrahedral and octahedral point groups**. The species are independent or distinct because each different point group represents a structurally

distinct molecule. In addition, these species are not obvious variants of each other based on the current record.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, or a single grouping of patentably indistinct species, for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, 1, 5, 7-24, 35 and 40 are generic.

There is a search and/or examination burden for the patentably distinct species as set forth above because at least the following reason(s) apply:

- (1) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries); and
- (2) the prior art applicable to one invention would not likely be applicable to another invention.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or a grouping of patentably indistinct species to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected species or grouping of patentably indistinct species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

The election may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and

specifically point out supposed errors in the election of species requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected species or grouping of patentably indistinct species.

Should applicant traverse on the ground that the species, or groupings of patentably indistinct species from which election is required, are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing them to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the species unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other species.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jae W. Lee whose telephone number is 571-272-9949. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Manjunath Rao can be reached on 571-272-0939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAE W LEE/
Examiner, Art Unit 1656

/SUZANNE M. NOAKES/
Primary Examiner, Art Unit 1656